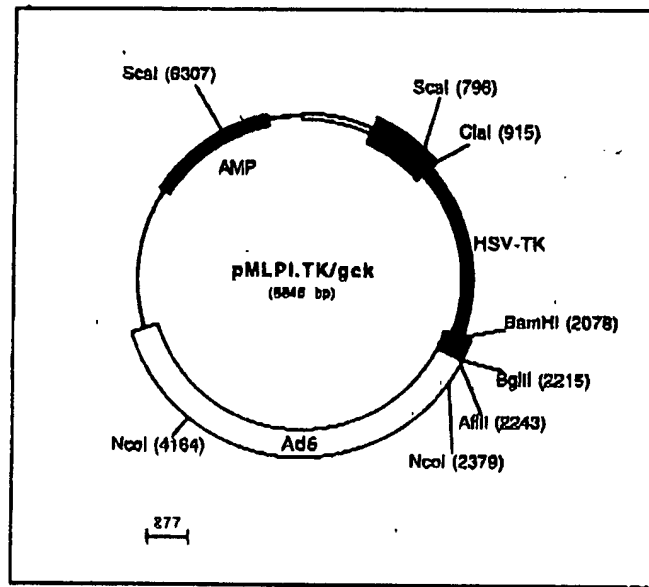


Figure 1



664020-4863466

Figure 2

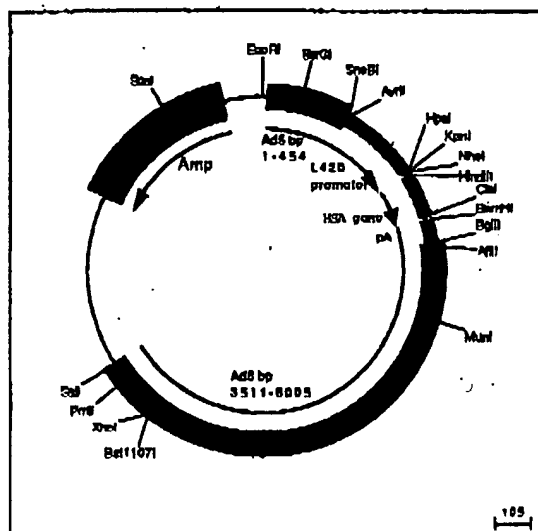


Figure 3

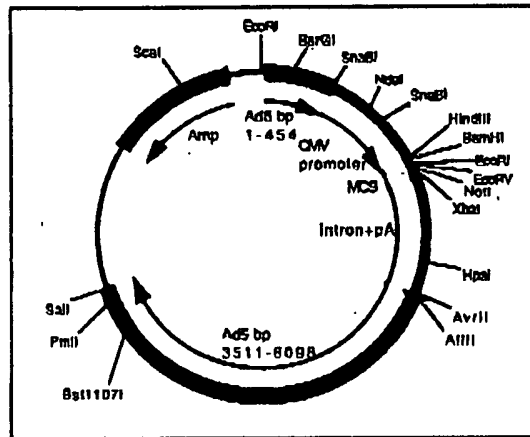
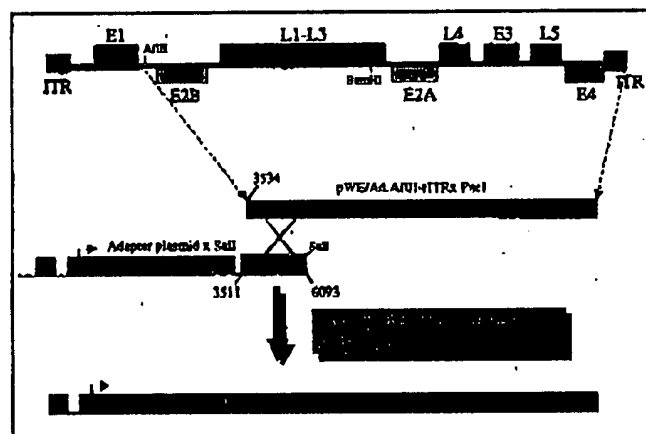
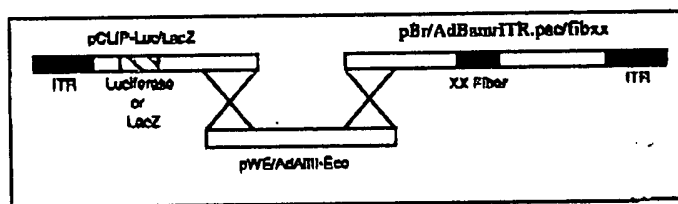


Figure 4



662043-13031660

Figure 5



66230-482300

Figure 6

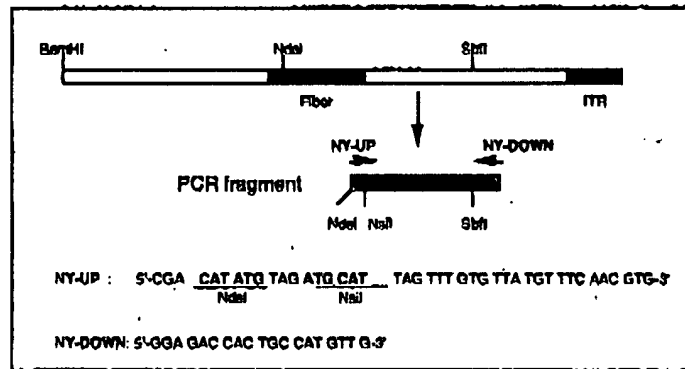


Figure 7:

1.1: Serotype 8 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFLTTPPFVSSNGFQ
NFPPGVLSLKLADPITINNQNVS LKVG GGLTLQEETGKLT VNTEPPLHLTNNKLG I
ALDAPFDVIDNKL TLLAGHGLS IITKETSTLPGL VNTLVVLTGKGIGTDLSNNGGN
ICVRVGE GGGLSFN DNGDLVAFNKKEDKRTLW TTPDTSPNCRIDQDKDSKLT LV
LTKCGSQILANVSLIVVAGRYKIINNNTNPALKGFTIKLLFDKNGVLMESSNLGKS
YWNFRNQNSIMSTAYEKAIGFMPNLVAYPKPTTGSKKYARDIVYGNIYLGKPH
QPVTIKTTFNQETGCEYSITFDFSWAKTYVNVEFETTSFTFSYIAQE.

1.2: Serotype 9 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFLTTPPFVSSDGFQ
NFPPGVLSLKLADPIAVNGNVSLKVG GGLTLQDGTGKLT VNADPPLQLTNNKL
GIALDAPFDVIDNKL TLLAGHGLS IITKETSTLPGLINTLVVLTGKGIGTESTDNGG
SVCVRVGE GGGLSFN DNGDLVAFNKKEDKRTLW TTPDTSPNCKIDQDKDSKLT LV
VLTCKGSQILANVSLIVVAGKYKIINNNTQPALKGFTIKLLFDENGVLMESSNLGK
SYWNFRNENSIMSTAYEKAIGFMPNLVAYPKPTAGSKKYARDIVYGNIYLGKPH
DQPVTIKTTFNQETGCEYSITFDFSWAKTYVNVEFETTSFTFSYIAQE.

1.3: Serotype 13 fiber protein

XXXXXSAPTIFMLLQMKRARSSXDTFNPVYPYGYARNQNIXFXTPPFVXSDGF
KNFPPGVLSLKLADPITIANGDVSLKVG GGLTLQEGSLTVDPKAPLQLANDKKLE
LVYDDPFEVSTNKL SLKVGHGLKVLDDKSAGGLKDLIGKLVVLTGKGIGIENLQ
NDDGSSRGVGINVRLGTDGGLSFDRKGELVAWNRKDDRRTLW TTPDPSPNCKA
ETEKDSKLT LVLTCKGSQILATVSIIVLKGYEFVKKETEPKSPDVKLLFDSKGV L
LPTSNLSKEYWNYRSYDN NIGTPYENAVPFMPNLKAYPKPTKTA SDKAENKISS
AKNKIVSNFYFGGQAYQPGTIHKFNEEIDETCAYSITFNFGWGKVYDNPFPFDTTS
FTXSYIAQE.

1.4: Serotype 14 fiber protein

HPFINPGFISPNGFTQSPDGVLT LKCLTPLTTTGGSLQLKVGGGLTVDDTDGTLQE
NIGATTPLVKTGHSIGLSL GAGLGTDENKLC TKLGEGLTFNSNNICIDDNINTLWT
GVNPTEANCQMMDSSESNDCKLIL TLVKTGALVTA FVYVIGVSNNFNMLTTYRN
INFTAELFFDSAGNLLTSLSSLKTPLNHKSGQTWLLVPLLMLKVSCPAQLLILSIIL
EKNKTTFTTEL VTTQLVTLLFPLTISVMLNQRAIRADTSYCIRITWSWNTGDAPEG
QTSATTLVTS

1.5: Serotype 20 fiber protein

IQNIPFLTTPPFVSSDGLQNFPPGVLSLKLADPIAVNGNVSLKVG GGITVEQDSGQL
IANPKAPLQVANDKLELSYAYPFETSANKLSLKVGGQLKVLDEKDSGGLQNLG
KLVLVTGKGIGVEELKNPDNTNRGVGINVRLGKDGGLSFNKNGELVAWNKHND

TGTLWTTDPSPNCKIEEVKDSKLTLLVLTCKGSQILATMAFQVVKGTYENISKNT
AKNSFSIKLLFDDNGKLLLEGSSLDKDYWNFRSDDSIIPNQYDNAVPFMPNLKAYP
KPSTVLPSTDKNSNOKNTTVSNLYLEGKAYQPVAVTITFNKEIGCTYSITFDGWA
KTYDVPIPFSSST

1.6: Serotype 23 fiber protein

QNIPFLTPPFVSSDGFQNFPPGVLSLKLADPIATNGDVSLKVGGGLTVEQDSGNL
KVNTKAPLQVAADKQLEIALADPFEVSKGRLGIKAGHGLKVIDNSISGLEGLVGT
LVVLTGHGIGTENLLNNDGSSRGVGINVRLGKDGGLSFDKKGDLVAWNKKYDT
RTLWTTDPSPNCKVIEAKDSKLTLLVLTCKGSQILANMSLLILKGTYEYISNAIAN
KSFTIKLLFNDKGVLMGSSLDKDYWNYKSDDSVMSKAYENAVPFMPNLKAYP
NPTTSTTNPSTDKKSNOKNAINVSNVYLEGRAYQPVAITITFNKETGCTYSMTFDF
GWSKVYNDPIPFDTSSLT

1.7: Serotype 24 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFLTPPFVSSDGFQ
NFPPGVLSLKLADPIATNGDVSLKVGGGLTVEKDSGNLKVNPAPLQVTTDKQL
ELALAYPFEVSNGLKGIKAGHGLKVIDKIAGLEGLAGTLVVLTGKGIGTENLENS
DGSSRGVGINVRLAKDGGLSFDKKGDLVAWNKHDDRTLWTTDPSPNCTIDQ
ERDSKLTLLVLTCKGSQILANVSLLVVKGKFSNNNNNTNPTDKKITVKLLFNEKGV
LMDSSTLKKEYWNYRNDNSTVSQAYDNAVPFMPNKA YPKPTTDTSAKPEDKK
SAAKRYTVSNVYIGGLPDKTVVITIKFNAETECAY SITFEFTWAKTFEDVQFDSSSF
TFSYIAQE.

1.8: Serotype 25 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFLTPPFVSSDGFQ
NFPPGVLSLKLADPITISNGDVSLKVGGGLTVEQDSGNLSVNPAPLQVGTDKKL
ELALAPPFNVKDNKLDLLVGDGLKVIDKSISXLPGLLNYLVVLTGKGIGNEELKN
DDGSNKGVLGCVRIGEGGGLTFDDKGYLVAWNKKHDIRTLWTTLDPSPNCRID
VDKDSKLTLLVLTCKGSQILANVSLLVVKGRFQNLNYKTNPNLPKTFTIKLLFDEN
GILKDSSNLDKNYWNYRNGNSILAEQYKNAVGFMPNLAA YPKSTTTQSKLYAR
NTIFGNTYLDQA YNPVVIKITFNQEADSA YSITLNYSWGKD YENIPFDS

1.9: Serotype 27 fiber protein

IPFLTPPFVSSDGFKNFPPGVLSLKLADPITITNGDVSLKVGGGLVVEKESGKLSV
DPKTPLQVASDNKLELSYNAPFKVENDKLSLDVGHGLKVIGNEVSSLPGLINKLV
VLTGKGIGTEELKEQNSDKIIGVGINVRARGGLSFDNDGYLVAWNPKYDRTLW
TTPDTSPNCKMLTKKDSKLTLLVLTCKGSQILGNVSLLAVSGKYLNMKDETGVKI
ILLFDRNGVLMQESSLDKEYWNYRNDNNVIGTPYENAVGFMPNLVAYPKPTSA
DAKNYSRSKIISNVYLKGLIYQPVIIASFNQETTNGCVYSISFDFTCSKDYTGQQF
DVTSF

1.10: Serotype 28 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFLTPPFVSSDGFQ
NFPPGVLSLKLADPITIANGDVSLKLGGGLTVEKESGNLTVNPAPLQVASGQLE
LAYYSPFDVKNNMLTLKAGHGLAVVTKDNTDLQPLMGTLVVLTGKGIGTGTS

HGGTIDVRIGKNGSLAFDKNGLVAWDKENDRRTLWTTPTDSPNCKMSEVKDS
KLTLILTKCGSQILGSVSLAVKGEYQNMTASTNKNVKITLLFDANGVLLEGSSL
DKEYWNFRNNDSTVSGKYENAVPFMPNITAYKPVNSKSYARSHIFGNVYIDAKP
YNPVVIKISFNQETQNNCVYSISFDYTCSKEYTGMQFDVTSFTFSYIAQE.

1.11: Serotype 29 fiber protein

QNIPFLTTPPFVSSDGFKNFPPGVLSLKLADPIAITNGDVSLKVGGGLTVEQDSGNL
SVNPKAPLQVGTDKKLELALAPPFVVRDNKLAIVGDGLKVIDRSISDLPGLLNY
LVVLTGKGIGNEELKNDDGSNKGVGLCVRIGEGGGLTFDDKGYLVAWNNKHDI
RTLWTTLDPSPNCKIDIEKDSKLTLLVLTCKGSQILANVSLIIVNGKFKILNNKTDP
LPKSFNIKLLFDQNGVLENSNIEKQYLNFRSGDSILPEPYKNAIGFMPNLLAYAK
ATTDQSKIYARNTTYGNTYLDNQPYNPVVIKITFNNEADSAYSITFNYSWTKDYD
NIPFDSTSFTS

1.12: Serotype 30 fiber protein

SCSCPSAPTIFMLLQMKRARPSTFNPVYPYGYARNQNIPFXTPPFVXSDGFK
NFPFVLSLKLADPIAITNGDVSLKVGGGLTVEQDSGNLSVNPKAPLQVGTDKK
LELALAPPFVVRDNKLAIVGDGLKVIDRSISDLPGLLNYLVVXTGKGIGNEELK
NDDGSNKGVGLCVRIGEGGGLTXDDKGYLVAWNNKHDIRTLWTTLDPSPNCKI
DIEKDSKLTLLVLTCKGSQILANVSLIIVNGKFKILNNKTDPKSLPKSFNIKLLFDQNG
VLENSNIEKQYLNFRSGDSILPEPYKNAIGFMPNLLAYAKATTDQSKIYARNTTY
GNTYLDNQPYNPVVIKITFNNEADSAYSITFNYSWTKDYDNIPFDSTSFTFSYIAQE

1.13: Serotype 32 fiber protein

SCSCPSAPTIFMLLQMKRARPSEDTFNPVYPYGYARNQNIPFLTTPPFVSSDGFQ
NFPFVLSLKLADPITIANGNVSLKVGGGLTLEQDSGKLIVNPKAPLQVANDKLE
LSYADPFETSANKLSLKVGHGLKVLDEKNAGGLKDLIGTLVVLTGKGIGVEELK
NADNTNRGVGINVRLGKDGGLSFDKKGDLVAWNNKHDDRRTLWTTDPDSPNCTI
DEERDSKLTLLVLTCKGSQILANVSLLVVKGKFSNINNNTNPTDKKITVKLLFNEK
GVLMDSSSLKKEYWNYRNDNSTVSQAYDNAVPFMPNKAYPEKPTTDTSAKPED
KKSAAKRYIVSNVYIGGLPDKTVVITIKLNAETESAYSMTFEFTWAKTFENLQFD
SSSFTFSYIAQE.

1.14: Serotype 33 fiber protein

SCSCPSAPTIFMLLQMKRARPSEDTFNPVYPYGYARNQNIPFLTTPPFVSSDGFK
NFPFVLSLKLADPITITNGDVSLKVGGGLTLQEGSLTVNPKAPLQLANDKKLEL
VYDDPFVSTNKLVLKVGHGLKVLDDKSAGGLQDLIGKLVVLTGKGIGIENLQN
DDGSSRGVGINVRLGTDGGLSFDKRGELVAWNNKDDRRTLWTTDPDSPNCKAE
TEKDSKLTLLVLTCKGSQILATVSIIVLKGKYEYFVKKETEPKSFVKKLLFDSKGVLL
PTSNLSKEYWNYRSYDNNIGTPYENAVPFMPNLKAYPKPTKTASDKAENKISSA
KNKIVSNFYFGGQAYQPGTIIKFNEEIDETCAYSITFNFGWGKVYDNPFPFDTSF
TFSYIAQE.

1.15: Serotype 34 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYEDESTSQHPFINPGFISPNGFTQ
SPDGVLTCLKLTPLTTTGGSLQLKVGGGLTVDDTDGTLQKNIRATTPITKNNHSV
ELTIGNGLETQHNLCAKLGNGLKFNNGDICIKDSINTLWTGINPPPNQIVENTN
TNDOKLTLVLVKNGLVNGYVSLVGVSDTVNQMFQTQKTANIQLRLYFDSSGNL
LTDESCLKIPLKNKSSTATSETVASSKAFMPSTTAYPFNTTTRDSENYIHGICYM
TSYDRSLFPLNISIMLNSRMISSNVAYAIQFEWNLNASESPEKQHMTLTTSPPFFSY
IEDDN.

1.16: Serotype 35 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYEDESTSQHPFINPGFISPNGFTQ
SPDGVLTCLKLTPLTTTGGSLQLKVGGGLTVDDTDGTLQENIRATAPITKNNHSV
ELSIGNLETQNNKLCAKLGNGLKFNNGDICIKDSINTLWTGINPPPNQIVENTN
TNDGKLTLLVLVKNGLVNGYVSLVGVSDTVNQMFQTQKTANIQLRLYFDSSGNL
LTEESDLKIPLKNKSSTATSETVASSKAFMPSTTAYPFNTTTRDSENYIHGICYM
TSYDRSLFPLNISIMLNSRMISSNVAYAIQFEWNLNASESPESNIMTLTTSPPFFSY
TEDDN.

1.17 Serotype 36 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFLTTPPFVSSDQFK
NFPPGVLSLKLADPIAVNGDVSLKVGGGLTVEQDSGKLKVNPKIPLQVNDQLE
LATDKPFKIENNLALDVGHGLKVIDKTISDLQGLVGKLVVLTGVGIGTETLKD
NDKVIGSAVNVRLGKDGGLDENKKGDLVAWNRYYDRRTLWTTDPDSPNCKVS
EAKDSKLTLLVTKCGSQILASVALLIVKGKYQTISESTIPKDQRNFSVKLMFDEKG
KLLDKSSLDKEYWNFRSNDVVGTA YDNAVPFMPNLKAYPKNTTTSSTNPDDKI
SAGKKNIVSNVYLEGRVYQPVALT VKFNSENDCAYSITFDVWSKTYESPVAFD
SSSFTFSYIAQE.

1.18 Serotype 37 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFLTTPPFVSSDQFK
NFPPGVLSLKLADPITITNGDVSLKVGGGLTLQDGS LTVNPKAPLQVNTDKKLEL
AYDNPFESSANKLSLKVGHGLKVLDEKSAAGLKD LIGKLVVLTGKGIGTENLEN
TDGSSRGIGINVRAREGLTFDNDGYLVAWNP KYDLRTLWTTPDTS PNCTIAQDK
DSKLTLLVTKCGSQILANVSLIVVAGKYHIINNKTNPKIKSFTIKLLFNKNGVLLD
NSNLGKAYWNFRSGNSNVSTAYEKAIGFMPNLVAVSKPSNSKKYARDIVYGNTY
LGGKPDQPGVIKTTFNQETGCEYSITFNFSWSKTYENVEFETTSFTFSYIAQE.

1.19 Serotype 38 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFXTTPPFVXSDGFQ
NFPPGVLSLKLADPITIANGNVSLKVGGGLTLEQDSGKLIVNXKAPLQVANDKLE
LSYADPFETSANKLSLKVGHGLKVLDEKNAGGLKDLIGTLVVLTGKGIGVEELK
NADNTNRGVGINVRLGKDGGLSFDKKGD XVAWNKHDDRRTLWTTDPDSPNCTI
DEERDSKLTLLVTKCGSQILANVSLLVKGKFSNINNTNPTDKKITVKKLLENEK
GVLMDSSSLKKEYWNRYRNDNSTVSQAYDNAVPFMPNIKAYPKPTTDTSAKPED
KKSAAKRYTVSNVYIGGLPDKTVVTIKLNAETESAYSMTFEFTWAKTFENLQFD
SSSFTFSYIAQE.

1.20 Serotype 39 fiber protein

IRISPSSLPLSPMDSKTSPLGCTYHSNWLTQSPSPMGMMSHSRWEGGSPWQEGTG
DLKVNAKSPLQVATNKQLEIALAKPFEEKDGLALKIGHGLAVVDENHTHLQSL
IGTLVILTGKGIGTGRAESGGTIDVRLGSGGGLSFDKDGNLVAWNKDDDRRTLW
TTPDPSPNCKIDQDKDSKLTFLVTKCGSQILANMSLLVVKGKFSMINNKVNGTD
DYKKFTIKLLFDEKGVLLKDSSLDKEYWNYRSNNNNVGSAYEEAVGFMPSTTA
YPKPPTPPTNPTTPLEKSQAKNKYVSNVYLGGQAGNPVATTVSFNKETGCTYSIT
FDFAWNKTYENVQC.

1.21: Serotype 42 fiber protein

SCSCPSAPTIFMLLQMKRARPS EDTFNPVYPYGYARNQNIPFLTTPPFVSSDGFK
NFPPGVLSLKLADPIAITNGDVSLKVGGGLTLQDGTGKLTIDTKTPLQVANNKLE
LAFDAPLYEKNGLALKTGHGLAVLTKDIGIPELIGSLVILTGKGIGTGTVAGGGT
IDVRLGDDGGLSFDKKGDLVAWNKKNDRRTLWTPDPSPNCRVSEDKDSKLTIL
LTKCGSQILASFSLLVXGTYTTVDKNTTNKQFSIKLLFDANGKLKSESNLSGYW
NYRSDNSVSTPYDNAVPFMPNTTAYPKIINSTTDPENKKSSAKKTIVGNVYLEG
NAGQPVAVAISFNKETTADYSITFDFAWSKAYETPVFPDTSSMTFSYIAQE.

1.22: Serotype 43 fiber protein

NIPXLTPPFVSSDGFKNFPPGVLSLKLADPITITNGDVSLKVGGGLTVEKESGNLT
VNPAPLQVAKGQLELAYDSPFDVKNMMLTLKAGHGLAVVTKDNTDLQPLMG
TLVVLTGKGIGTGTSAGGGTIDVRIGKNGSLAFDKDGLVAWDKENDRRTLWT
TPDTSPNCKMSEAKDSKLTILTKCGSQILGSVSLAVKGEYQNMTANTKKNVKI
TLLFDANGVLLAGSSXXKEYWNFRSNDSTVSGNYENAVQFMPNITAYKPTNSKS
YARSVIFGNVYIDAKPYNPVVIKISFNQETQNNCVYSISFDYTLISKDYPMQFDV
TLS

1.23: Serotype 44 fiber protein

NIPFLTTPPFVSSDGFKNFPPGVLSLKLADPITITNGNVSLKVGGGLTLQEGTGDLK
VNAKSPLQVATNKQLEIALAKPFEEKDGLALKIGHGLAVVDENHTHLQSLIGTL
VILTGKGIGTGSAESGGTIDVRLGSGGGLSFDKDGNLVAWNKDDDRRTLWTPD
PSPNCKIDQDKDSKLTFLVTKCGSQILANMSLLVVKGKFSMINNKVNGTDDYKK
FTIKLLFDEKGVLLKDSSLDKEYWNYRSNNNNVGSAYEEAVGFMPSTTAYPKPP
TPPTNPTTPLEKSQAKNKYVSNVYLGGQAGNPVATTVSFNKETGCTYSITFDFA
WNKTYENVQFDSSF

1.24: Serotype 45 fiber protein

NIPFLTTPPFVSSDGFKNFPPGVLSLKLADPIAITNGDVSLKVGGGLTVEKDSGNLK
VNPAPLQVTTDKQLEIALAYPFEVSNGLGKAGHGLKVIDKIAGLEGLAGTLV
VLTGKGIGTENLENSDGSSRGVGINVRLAKDGVLAFDKKODLVAWNKHDDRRT
LWTPDPSPNCTIDQERDSKLTFLVTKCGSQILANVSLVVKGKFSNNNNANPT
DKKITVKKLLFNEKGVLMDSSTLKKEYWNYRNDNSTVSQAYDNAVPFMPNIKAY
PKPSTDTSAPKPEDKSAKRYIVSNVYIGGLPDKTVVITIKFNAETECAY SITFEFT
WAKTFEDVQCDSSSFT

1.25: Serotype 46 fiber protein

NIPFLTPPFVSSDGFKNFPPGVLSLKLADPLAIVNGDVSLKVGGGLTLQEGNLTVD
AKAPLQVANDNKLELSYADPFVVKDTKLQKLVGHGLKVIDEKTSSGLQSLIGNL
VVLTKGKIGTQELKDKDDETKNIGVGINVRIGKNESLAFDKDGNLVAWDNENDR
RTLWTTPTDTSKFKISTEKDSKLTVLTKCGSQILASVSLAVAGSYLNMTAST
QKSUKVSLMFDSKGLLMTTSSIDKGYWNYRNKNSVVGTAAYENAIFFMPNLVAYP
RPNTPDSTKIYARSKIYGNVYLAGLAYQPIVITVSFNQEKDASCAYSITFEFAWNKD
YVGQFDTSFT

1.26 Serotype 47 fiber protein

SCSPAPTIFMILLQMKRARPS EDTFNPVYPYGYARNQNIPFLTPPFVSSDGFKNF
PPGVLSLKLADPITTINGDVSLKVGGGLTLQEGTGNLTVNAKAPLQVADDDKLE
LSYDNPFEVSANKLSLKVGHGLKVLDKNSGGQLQELIGKLVLTGKIGVEELKN
ADNTNRGVGINVRLGKDGGLSFDKKGELVAWNKHNDRTLWTTPTDPSPNCKIE
QDKDSKLTVLTKCGSQILATMAFQVVKGTENISKNTAKKSFSIKLLFDDNGKL
LEGSSLDKDYWNFRNDDSIMPNQYDNAVPFMPNLKAYPNPKTSTVLPSTDKKS
GKNTIVSNLYLEGKAYQPVAVTITFNKETGCTYSITFEFGWAKTYDVPIPFDSSSP
TFSYIAQE.

1.27: Serotype 48 fiber protein

SDIPFLTPPFVSSDGFQNPFGVLSLKLADPITTINGNVSLKVGGGLTLQEGTGDLK
VNAKSPLQVATNKQLEIALAKPFEEKDGLALKIGHELAVVDENLTHLQSLIGTL
VILTKGKIGTGRAESGGTIDVRLGSGGGLSFDKDGNLVAWNKDDDRRTLWTTPTD
PSPNCKIDQDKDSKLTFLVLTCKGSQILANMSLLVVKGKFSMINNKVNGTDDYKK
FTIKLLFDEKGVLLKDSSLDKEYWNYRSNNNNVGSAYEEAVGFMPSTTAYPKPP
TPPTNPITPLEKSQAKNKYVSNVYLGGQAQNPVATTVSFNKETGCTYSITFDFA
WNKTYKMAFIPRFNF

1.28: Serotype 49 fiber protein

SCSCSPAPTIFMILLQMKRARPS EDTFNPVYPYGYARNQNIPFLTPPFVSSDGFQ
NFPPGVLSLKLADPIAITNGNVSLKVGGGLTVEQDSGNLKVNPAPLQVATDNQ
LEISLADPFVKNKKLSLKVGHGLKVIDENISTLQGLLGNLVLTGGMIGITEELK
KDDKIVGSAVNVRLGQDGLTFDKKGDVAWNKENDRRRTLWTTPTDPSPNCKVS
EEKDSKLTVLTKCGSQILASVSLLVVKGKFANINNKTNPGEDYKXFSVKLLFDA
NGKLLTGSSLDGNYWNYKNKDSVIGSPYENAVPFMPNSTAYPKIINNGTANPED
KKSAAKKTTVTNVYLGGDAAKPVATTISFNKETESNCVYSITFDFAWNKTYKNV
PFDSSSLTFSYIAQE.

1.29.: Serotype 51 Fiber protein

SCSCSPAPTIFMILLQMKRARPS EDTFNPVYPYEDESTSQHPFINPGFISPNGFTQ
SPDGVLTNLCLTPLTTTGGPLQLKVGGGLVDDTDGTLQENIRVTAPITKNNHSV
ELSIGNLETQNNKLCAKLGNGLKFNNGDICIKDSINTLWTGIKPPPNCQIVENTD
TNDGKLTVLVKNGLLVNGYVSLVGVS DTVNQMFQKSATIQRLRYFDSSGNLL
TDESNLKIPLKNKSSTATSEAATSSKAFMPSTTAYPFNTTTRDSENYIHGICYMT
SYDRSLVPLNISIMLNSRTISSNVAYAIQFEWNLNAKESPESENIALTTSPFFFSYIIE
DTTKCISLCYVSTCLFFN

Figure 8

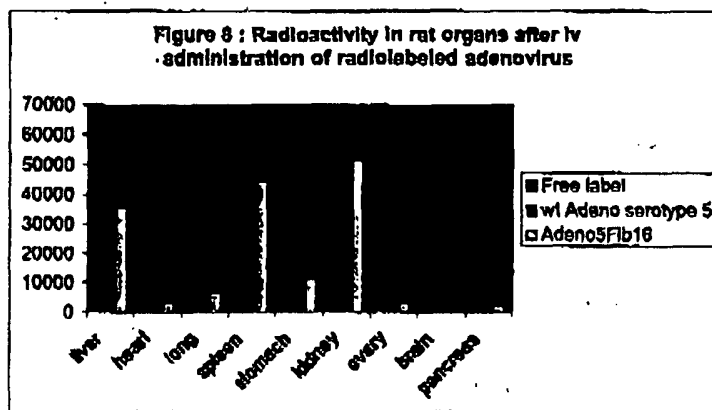
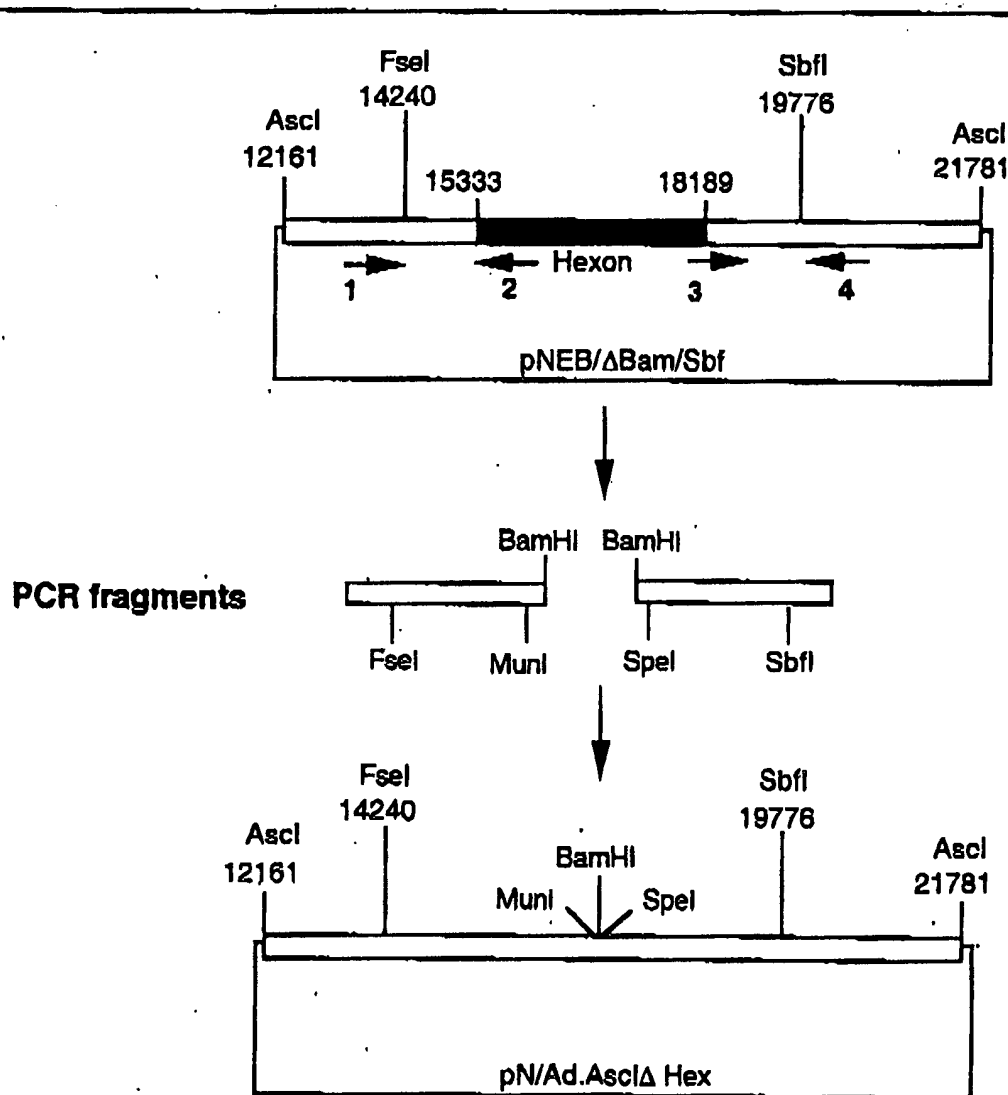


Figure 9



1: ΔHex1: 5'- CCT GGT GCT GCC AAC AGC- 3'

2: ΔHex2: 5'- CC GGATCC CAATTG GGA AAG CGG GCG CGC G- 3'

3: ΔHex3: 5'- CC GGATCC TGATCA AGA AGC AAG CAA CAT CAA CAA C- 3'

4: ΔHex4: 5'- GAG AAG GGC ATG GAG GCT G- 3'

Figure 10

1.1: Serotype 34 hexon protein

LSRRAPGFPLVKMATPSMLPQWAYMHIAGQDASEYLSPLVQFARATDTYFNL
GNKFRNPTVAPTHDVTDRSQRMLRFVPVDREDNTYSYKVRITLAVGDNRLV
DMASTFFDIRGVLDGRGPSFKPYSGTAYNSLAPKGAPNASQWLDKGVSTSTGLVDD
GNTDDGEEAKKATYTFGNAPVKAEEITKDGLPVGLEVSTEGPKPIYADKLYQP
EPQVGDETWTDLDGKTEEYGGRLKPKETKMKPCYGSFAKPTNIKGGQAKVKPK
EDDGTNNIEYDIDMNFDDLRSQRSELKPKIVMYAENVLDLECPDTHVVYKPGVSD
ASSETNLGQQSMPNRPNYIGFRDNFGLMYNSTGNMGVLAGQASQLNAVVDL
QDRNTELSYQLLDSLGDRTYFMSWNQAVDSYDPDVRVIENHGVEDELPNYCF
PLDGVGPRTDSYKEIKPNGDQSTWTNVDPTGSSELAKGNPFAMEINLQANLWRS
FLYSNVALYLPDSYKYTPSNVTLPENKNTYDYMNGRVVPPSLVDTYVNIGARWS
LDAMDNVNPFNHHRNAGLRYSMLLGNGRYVPFHIQVPQKFFAVKNLLLLPGS
YTYEWNFRKDVNMVLQSSLDLNRVDGASISFTSINLYATFFPMAHNTASTLEA
MLRNDTNDQSFNDYLSAANMLYPIANATNIPISIPSRNWAAFRGWSFTRLKTKE
TPSLGSGFDYPYFVYSGSIPLDGTFYLNHTFKKVSIMFDSSVSWPGNDRLLSPNEFEI
KRTVDGEGYNVAQCNMIDWFLVQMLANYNIGYQGFYIPEGYKDRMYSFFRNF
QPMSRQVVDEVNYKDFKAVIPYQHNSGFVGYMAPTMRQGQPYPANYPYPLIG
TTAVNSVTQKKFLCDRTMWRIPFSSNFMSMGALTDLGQNMLYANSAHALDMTF
EVDPMDEPTLLYLLFEVFDVVRVQPHRGIEAVYLRTPFSAAGNATT.

1.2: Serotype 35 hexon protein

LSRRAPGFPLVKMATPSMLPQWAYMHIAGQDASEYLSPLVQFARATDTYFNL
GNKFRNPTVAPTHDVTDRSQRMLRFVPVDREDNTYSYKVRITLAVGDNRLV
DMASTFFDIRGVLDGRGPSFKPYSGTAYNSLAPKGAPNASQWLDKGVSTSTGLVDD
GNTDDGEEAKKATYTFGNAPVKAEEITKDGLPVGLEVSTEGPKPIYADKLYQP
EPQVGDTWTDLDGKTEEYGGRLKPKETKMKPCYGSFAKPTNIKGGQAKVKPKE
DDGTNNIYDIDMNFDDLRSQRSELKPKIVMYAENVLDLECPDTHVVYKPGVSDAS
SETNLGQQMPNRPNYIGFRDNFGLMYNSTGNMGVLAGQASQLNAVVDLQDR
NTELSYQLLLSLGDRTYFMSWNQAVDSYDPDVRVIENHGVEDELPNYCFPLDG
VGPRTDSYKEIPNGDQSTWTNVDPTGSSELAKGNPFAMEINLQANLWRSFLYSN
VALYLPDSYKYTSNVTLPENKNTYDYMNGRVVPPSLVDTYVNIGARWSLDAMD
NVNPFNHHRNAGRYRSMMLGNGRYVPFHIQVPQKFFAVKNLLLLPGSYTYEWN
FRKDVNMVLQSSLDLNRVDGASISFTSINLYATFFPMAHNTASTLEAMLRNDTND
QSFNDYLSAANMLYPIANATNIPISIPSRNWAAFRGWSFTRLKTKETPSLGSGFDP
YFVYSGSIPYLDGTFYLNHTFKKVSIMFDSSVSWPGNDRLLSPNEFEIKRTVDGEGY
NVAQCNMIDWFLVQLANYNIGYQGFYIPEGYKDRMYSFFRNFQPMSRQVVDE
VNYKDFKAVAIPIYQHNSGFVGYMAPTMRQGQPYPANYPYPLIGTTAVNSVTQK
KFLCDRTMWRIPFSSNFMSALTDLGQNMLYANSAHALDMTFEVDPMDEPTLLY
LLFEVFDVVRVHQPARGIEAVYLRTPFSAAGNATT.

1.3 Serotype 36 hexon protein

